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MEDIA, TECHNOLOGY & LIFELONG LEARNING
www.seminar.net

ISSN: 1504-4831 Vol 19, No 2 (2023) https://doi.org/10.7577/seminar.5503

'The Students Like Me Less in Digital Lectures': Teachers' Experiences of Teaching in Digital Learning Environments With Large Groups of Students During the COVID-19 Pandemic[1]

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[1] This is an adapted version of the Norwegian article Breiby, M. A., Hauge, Å. L., Holen, S., & Stølan, T. (2022). «Studentene liker meg mindre på digitale forelesninger»–undervisernes opplevelse med undervisning i digitale læringsmiljø for store studentkull under covid-19-pandemien. *Uniped*, *45*(4), 250-263. https://doi.org/10.18261/uniped.45.4.2

Abstract

The COVID-19 pandemic actualized teaching in digital learning environments and brought a steep learning curve for teachers in higher education. Several studies focusing on students' experiences of this period have gradually emerged, but there has been less on how teachers experience digital learning environments. Hence, the purpose of this empirical study was to gain knowledge about how teachers experienced online teaching of large groups during the pandemic. Two group interviews were conducted with experienced teachers. The main finding was that teaching in digital environments leads to a type of *digital apathy*. The teachers experienced *black screens* and lower response from students, having a negative effect on them. They become tired, demotivated, and drained of energy. They experienced losing their qualities as lecturers, becoming boring, and being less free in what they could say. Breakout groups were easy to manage, but many students would leave when these were introduced. Teaching in digital learning environments seemed to lead to a comfortable distance, which posed a risk for both students and teachers to become resigned. Therefore, this teaching format may be more demanding than teaching in physical environments. The interviews were conducted in April 2021 when teaching in digital learning environments was novel, and the informants' expectations may have been characterized by traditional teaching. Their experiences may be different in the long run.

Keywords: Teaching, digital learning environments, online teaching, Zoom, black screens, digital apathy, teachers' experiences

Introduction

Achieving better teaching and learning quality, increased learning outcomes, and digital competence development among students as well as facilitation, flexibility, and efficiency are the most important reasons for investing in digital tools in higher education (HE) teaching (Solberg & Breivik, 2016). Korseberg et al. (2022) pointed out that there is a clear political expectation that in Norway, digital technology should be adopted more widely in HE. This requires didactic-digital competence on the part of teachers. When HE teachers use digital technology in their teaching, pedagogical considerations should be linked to both the courses and the choice of technology (Fossland, 2015).

In recent years, many universities and colleges have adopted various initiatives to develop didactic-digital competence among teachers, but it was not until the outbreak of COVID-19 in March 2020, when they were physically closed, that doing so gained momentum both in Norway and other countries. This meant that the HE sector suddenly had to change much of its teaching from physical learning environments to digital learning platforms with both synchronous (real-time) and asynchronous teaching methods (recording of lectures). One solution for many educational institutions was to conduct online teaching using the Zoom digital learning platform. Many employees had never heard of Zoom before COVID-19 and were ill-prepared for such an emergency situation (Langford & Stang, 2020).

There have been many stories in both local and national media about online teaching during the COVID-19 pandemic, referring in particular to the challenges faced in teaching students in digital learning environments (e.g., Bergwits-Larsen, 2021), where the interaction between lecturers and students is low. Despite lecturers' expectations of two-way communication, they miss the students turning on the camera (Lervik & Madsbu, 2021). A national survey showed that less than half of both teachers and students said that they had good discussions in digital learning environments (Solberg, et al., 2021). Some empirical studies have been conducted on students' experiences with Zoom teaching during COVID-19 (e.g., Lee et al., 2020; Popa, et al., 2020), but there has been little empirical research on teachers' perceptions of teaching in digital learning environments. This study therefore raises the following research question: How have teachers in higher education experienced teaching in digital learning environments with large student groups during the COVID-19 pandemic? The key aspect of the study is the teachers' experiences in a crisis situation when they had to go from teaching in physical environments to digital learning environments.

Conceptual Clarification

In the study, we use the terms *teaching in physical learning environments* and *teaching in digital learning environments*. By teaching in a physical learning environment, we mean traditional auditorium teaching, such as what largely took place before the pandemic. Teaching in digital learning environments involves different types of learning where digital technology is included in physical learning settings on campus, in combination with teaching in physical learning environments with more or less emphasis on digital, or purely digital, online models (Fossland,

2015). In this study, teaching in digital learning environments and online teaching are used to refer to teaching and lectures that take place only online. The study is mainly about synchronous teaching, but some examples of asynchronous instruction are mentioned by the participants when talking about digital learning environments. Although auditorium teaching is often characterized by teachers providing monologues, today, there is a great deal of attention attached to student-active teaching methods, which are methods that engage students in the learning process (Wittek & Bratholm, 2014). Student-active teaching methods can also be used for teaching in digital learning environments so that students become more participants (e.g., through summing groups and group work) (Lervik et al., 2018).

Large student cohorts (groups) were defined by Ronæs et al. (2012) as "where a teacher can no longer handle feedback on teaching activities personally or call the students by name. The limit is around 70-80 students" (p. 7). Large student cohorts are thus defined on the basis of there being fewer opportunities for a personal relationship between the teacher and students, and thus student-active teaching methods and dialogue may be restricted when teaching in digital learning environments. It is therefore particularly important to conduct research on teaching in digital learning environments with large student cohorts.

Theoretical Framework

Crisis Situation and the COVID-19 Pandemic

A crisis situation is an unwanted event that occurs suddenly, for which we are poorly prepared, there are few options, and little time to react, and where normal coping strategies are insufficient (Dyregrov, 2018). The COVID-19 pandemic is one such crisis, which has also had consequences for teaching. There are individual differences in how people handle crises, and in teaching, there are differences in what kind of digital competence can be mobilized quickly. What motivates employees to do a good job under normal circumstances is the need for competence, recognition (Kuvaas & Dysvik, 2008), autonomy/self-determination, intrinsic motivation (Deci & Ryan, 1985), and subjective self-efficacy (Bandura, 1997).

One could argue that during the COVID-19 pandemic, several of the basic needs that we take for granted have been absent, as many workers have been put in situations in which they must perform tasks for which they are ill-prepared and do not necessarily have the competence to carry out. When digital competence is low and there is little response and interaction from students and colleagues, the feeling of mastery is reduced, and energy is drained. The inner motivation that usually lies in autonomy/self-determination and the joy in doing the job itself in a physical classroom is reduced in the digital space. The motivation changes from intrinsically motivated to extrinsically motivated, which goes beyond quality and the subjective feeling of mastery over time.

A study by Henriksen et al. (2020) pointed out that moving teaching so quickly from campus-based settings to digital platforms as a result of the pandemic was demanding. With limited opportunities to design good didactic facilitation, many teachers have faced major challenges

during this time. Korseberg et al. (2022) believed that the pedagogical dimension of online teaching was limited at the start of the COVID-19 pandemic and contributed to negative attitudes towards it among students and staff.

From Teaching in Physical to Digital Learning Environments

In sociocultural learning theory, emphasis is placed on language and social interactions as important actions to promote learning (Säljö, 2013). From this perspective, much will change when teaching becomes fully digital. To achieve dialogue, both parties must see and hear each other spontaneously and synchronously (Vygotsky, 1986). This is more challenging with two-way communication and dialogue in a digital learning environment, and it is harder to maintain concentration. Without both verbal and nonverbal (analogue) feedback, it is difficult for a lecturer to learn what challenges the students are encountering in their teaching, such as whether the pace of a review is too fast (Fojcik et al., 2021). The opportunities in digital technology for higher education are closely linked to achieving this dialogue community, and this requires facilitation (Fossland, 2015). A lack of digital resources and poorly developed relationships among students and between students and teachers are barriers to learning in digital learning environments (Monk et al., 2015).

Korseberg et al. (2022) pointed out that digital technology in higher education can provide more student-activating teaching methods, pedagogical development, and increased accessibility in higher education if it is an integral part of a holistic learning and teaching design. In such case, the learning and the students must both be at the center of the pedagogical approach. This means, among other things, that the teaching must be perceived as appropriate and meaningful for the students. A study by Lee et al. (2020) emphasized in particular the meaning dimension, showing that to achieve increased student activity and engagement on Zoom, students should be given more opportunities to share the relationships that are emotionally close to them. The activities they suggested are about being seen and heard and feeling welcome as a means to experience a greater degree of “closeness” in a digital classroom. This, in turn, can contribute to increased learning outcomes. However, the pedagogical approaches described here require students and educators to engage and participate digitally, which can be a challenge in large student groups.

Didactic facilitation of teaching in digital learning environments can be seen in light of the theory of “remediation” (Bolter & Grusin, 2000; Nordkvelle, 2016). Bolter and Grusin (2000) argued that the introduction of new media always carries elements from older media at different levels. It takes time for opportunities in new media to be fully understood and put to full use. An example of this is the old television theatre, where theatre was performed as traditional theatre without exploiting opportunities within the television medium. The introduction of teaching in digital learning environments can be seen as a radical adaptation of the old medium, where elements from traditional auditorium teaching are taken further, even though teaching in digital settings opens up completely new ways of thinking about teaching.

Teachers' Experiences With Digital Learning Environments

Some empirical studies have been conducted on students' experiences with digital learning arenas, such as Zoom, during the COVID-19 pandemic (e.g., Popa et al., 2020; Solberg et al., 2021). The results of the study by Popa et al. (2020) showed significant differences between professors and students in terms of their level of adaptation, creativity, and need for help, but they also showed that the learning experience and didactic quality should be prioritized in online learning. A study by Solberg et al. (2021) referred to a greater extent to the psychological consequences of the COVID-19 situation, finding that two out of three students had experienced loneliness, reduced motivation, and problems structuring their everyday studies.

There has been little empirical research focusing on *teachers'* experiences of digital learning platforms during the COVID-19 pandemic. Marek et al. (2021) found in their study that teachers experienced high levels of stress and a heavy workload when moving teaching to digital settings during this time. This is consistent with the results of the study by Mheidly et al. (2020), which pointed to associations between stress/burnout and the use of digital platforms for workers in general. In the survey by Korseberg et al. (2022), technology fatigue among both students and staff was also highlighted as a result of the pandemic pushing forward a very rapid transition to teaching in digital learning environments. Sitting in front of digital screens for a long period of time can lead to several stress-related symptoms, both psychological and physical. Fauville et al. (2021) explained why "Zoom fatigue" has become a term through their study documenting that workers who spend much time in video conferencing experience general, social, emotional, and visual fatigue as well as demotivation.

Our aim for this article is therefore to investigate teachers' experiences of teaching in digital learning environments during COVID-19. We have chosen to see this in relation to large student groups and across different disciplines.

Methods

The COVID-19 pandemic actualized teaching in digital learning environments and brought a steep learning curve for teachers in higher education. Some empirical studies have been conducted on students' experiences with Zoom teaching during COVID-19 (e.g., Lee et al., 2020; Popa, et al., 2020), but there has been little empirical research on teachers' perceptions of teaching in digital learning environments. Hence, the purpose of this empirical study is to gain knowledge about how teachers experienced online teaching of large groups during the pandemic. Based on the purpose of this study, it was relevant to use a qualitative approach, through which experiences and thoughts could be detailed and explained (Mason, 2002).

Two focus group interviews were conducted with experienced teachers, with detailed notes taken during the conversations by three researchers. All the authors participated in both focus group interviews and thus gained good insight into the material before the analysis process. After the interviews, the notes were discussed and compared. The interview guide consisted of questions about general experiences with teaching and student-active forms of teaching in large classes.

They were then asked to compare teaching in physical learning environments with large classes in an auditorium with teaching in digital learning environments on Zoom. Each focus group interviews lasted approximately 1.5 hours.

We followed the guidelines from the Norwegian Centre for Research Data concerning how to conduct focus group interviews without processing personal data (Sikt, 2023). The interviews were not recorded, but three of the researchers were taken notes during the interviews. The data material did not contain personally identifiable background information.

The informants were recruited from the authors' own university, and an emphasis was placed on finding those with longstanding teaching experience, who were both male and female, and from different types of disciplines. By keeping the group size moderate, in-depth perspectives could be discussed in more detail in the group discussions (Liamputtong, 2011).

Table 1

	Sex	Discipline
1	Female	Organization
2	Female	Organization
3	Female	Economy
4	Male	Economy

First Focus Group Interviews (April 8, 2021)

Table 2

	Sex	Discipline
5	Female	Psychology
6	Male	Psychology
7	Male	Marketing, management
8	Male	Marketing, management

Second Focus Group Interviews (April 12, 2021)

Before the pandemic, a traditional teaching regime had been practiced at the university, with teaching in a physical learning environment the most common setting. Nevertheless, in the first group, three informants had been responsible for and had experience with fully or semi-digital courses before the pandemic.

The data material was analyzed using reflexive thematic analysis, which focuses on the researchers' reflexive involvement in the interpretation of the data (Braun and Clarke, 2022). The analysis was inductive, and the categorization was done based on the data, rather than theory. However, as Braun and Clarke (2020) emphasized, the results did not arise from the data material but came as a result of the researchers' work with the analysis. Thus, the researchers' subjectivity was a resource, and their own experience with teaching in digital learning environments was

central to understanding the data material. Our epistemology was social constructivist and in line with sociocultural learning theory (Säljö, 2013), with an emphasis on language and social interactions being important for learning and understanding reality.

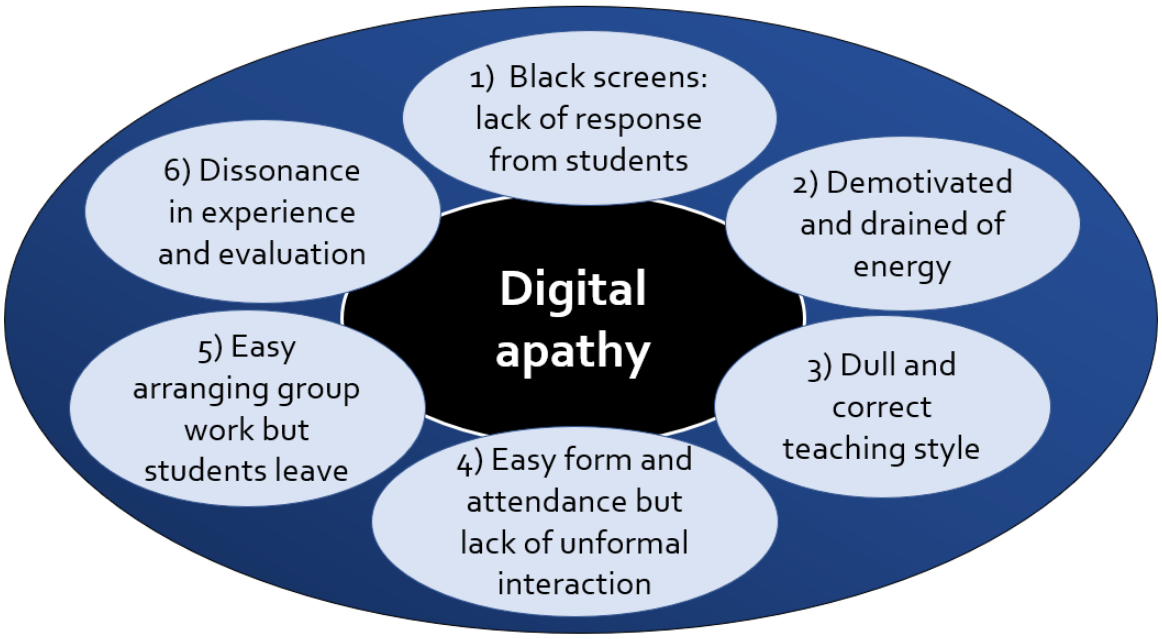
We followed the six steps of Reflexive Thematic analysis (Braun & Clarke, 2022): 1) Familiarization with the data, 2) Coding the data, 3) Generating initial themes, 4) Reviewing and developing themes, 5) Refining, defining and naming themes, and 6) Producing the report. The themes were discussed in a meeting among all the researchers to arrive at an optimal analyzation and categorization of the material together. The data were then viewed in relation to the relevant literature and discussed.

Results and Discussion

How is Teaching in Digital Learning Environments with Large Cohorts Experienced From the Teacher's Perspective?

The main finding, which is the core concept (Braun & Clarke, 2020) for this analysis, was that teaching in digital environments leads to a type of *digital apathy*. Apathy, defined by the *Oxford English Dictionary* as a lack of interest, enthusiasm, or concern, provides us with an analytical and latent understanding of how the informants described most of their experiences with and emotions toward online teaching, although they tried to overcome it. The six main categories that summarize why digital teaching led to this apathy are explained in detail in the following sections. The findings are illustrated in figure 1.

Figure 1: Illustration of the Main Themes



The informants in the group interviews compared teaching in a digital learning environment with teaching in a physical learning environment when they discussed their experiences of online

teaching. The table is therefore set up with these opposites, with the six main themes in the analysis in the left column of the table. Where there is a blank space in the subcategory, no contradiction was mentioned. After the table, each main category is explained and discussed (see table 3).

Table 3 - Teaching in Digital contrasting Physical Learning Environments

DIGITAL TEACHING MAIN THEMES	TEACHING IN DIGITAL LEARNING ENVIRONMENTS SUB THEMES	TEACHING IN PHYSICAL LEARNING ENVIRONMENTS SUB THEMES
1. BLACK SCREENS: LOWER RESPONSE FROM THE STUDENTS	Black screens Camera turned off. They accept this but prefer it on.	Reads response in faces and body postures.
	Little/nothing verbally, but something in chat.	Oral response.
	Response from few students.	Response from more students.
	The most active students in a physical learning environment are also the most active in a digital one. Equally low response from both genders.	A small group is active, but there is greater opportunity to discover and encourage more.
	The more participants, the less response.	
2. DEMOTIVATED AND DRAINED OF ENERGY	They got used to black screens.	
	Being demotivated by black screens.	Inspired.
	Tired.	Energy from being together.
	Drained.	Engaged, confirmed/supported?
3. DULL BUT CORRECT TEACHING STYLE	Boring.	Humor.
	Silence becomes awkward.	Use silence as a tool.
	Must work hard to be engaged.	Engagement comes naturally.
	Tell fewer stories/cases.	Stories/cases.
	Must be careful to say things correctly (recording).	Freer in how to say things.
	Lose the opportunity to use body language.	Body language/non-verbal signals.
	Missing blackboard.	

DIGITAL TEACHING MAIN THEMES	TEACHING IN DIGITAL LEARNING ENVIRONMENTS SUB THEMES	TEACHING IN PHYSICAL LEARNING ENVIRONMENTS SUB THEMES
	Lose the opportunity to make eye contact.	Eye contact.
	Lose qualities as a lecturer.	
4. EASY FORM AND ATTENDANCE BUT LACK OF INFORMAL INTERACTION	Good attendance (85%).	Lower attendance.
	Option for externals to participate.	Externals cannot participate.
	Frequent breaks.	Traditional 45 × 45 min.
	Rarely small talk during breaks.	Breaks with small talk.
	Recording vs. not recording. Challenges with GDPR.	No recording.
	Recordings published on internal learning platforms.	
5. EASY TO ARRANGE GROUP WORK, BUT THE STUDENTS LEAVE	Efficient exchange of plenums and groups.	Time-consuming to arrange group work.
	Easy to jump from group to group and participate as a teacher.	
	More than half of the students leave if group work is introduced.	Students stay during group work.
	In English (foreign language) group work – even more students leave.	
	Less learning across groups.	Learning across groups in plenary.
	Better group work when they get to choose the group themselves/the same groups over time, but many find it uncomfortable to choose a group without knowing someone	
6. DISSONANCE IN EXPERIENCES AND EVALUATION	Learn from experience – a positive development.	
	Good experience with digital teaching.	
	Will continue digital teaching.	
	Digital teaching has given awareness of the choice of teaching format.	Format and activities chosen more spontaneously.

1) Black Screens: Lower Response From the Students

It is clear that all the teachers experienced black screens when teaching in a digital learning environment with a large groups of students, even if they had encouraged the students to have their cameras on. As teachers, this caused them to lose the opportunity to read the students' responses from their faces and postures. Compared to physical learning environments, the teachers experienced this in a negative way. They rarely met the students and missed the students in real life.

In general, they reported little verbal response from the students, but they experienced being able to get some responses in the chat field. Getting feedback from the students on the teaching, both verbally and non-verbally, is central to sociocultural learning theory (Fojcik et al., 2021; Säljö, 2013). The interviews confirmed that teaching in a digital learning environment with large groups of students where the screens are switched off presents additional challenges. Säljö (2013) pointed out the importance of interaction both among students and between the teacher and students to achieve good learning. This is supported by the Swedish rhetorician Sigrell (2011), who claimed that "to lecture is to listen," precisely based on rhetorical analysis of the lecture as a genre. This interaction can easily become detrimental in teaching in a digital learning environment with large groups of students.

In the group interviews, there was a discussion on what characterized the few students who were active, and it was concluded that they were probably members of the group who had also been active in the auditorium. The challenge of teaching in a digital learning environment is that you lose the opportunity to discover those who need encouragement to speak. To increase students to respond, it is suggested that teachers agree with the active student so that they go ahead and comment.

2) Demotivated and Drained of Energy

Several of the interviewed teachers seemed to have been influenced by the social debate on students' right to have their cameras off. They had shown great understanding of the students turning off the cameras and would not force them to keep them on, and they had gradually become used to this teaching situation. They did not want to cause trouble for the students. When asked for more detail on how they experienced this, most were nevertheless clear that it had affected them negatively and that it was demotivating.

The teachers talked about how they experienced being inspired, engaged, and energized by teaching in an auditorium. When teaching in a digital learning environment, however, they experienced to a greater extent becoming tired and running out of energy. The emotional reactions came as a consequence of the lack of interaction and response, which, according to sociocultural learning theory, are essential (Säljö, 2013), and this is something that rhetorical theory also emphasizes (e.g., Sigrell, 2011). Furthermore, the findings are in line with other studies of the negative consequences of teaching in a digital learning environment and spending much time in digital settings (Fauville et al., 2021; Mheidly et al., 2020).

3) Dull but Correct Teaching Style

Whereas engagement may come naturally to both lecturers and students in an auditorium, the informants experienced having to work very hard to achieve it when teaching in a digital learning environment. They also found the teaching more exhausting.

The teachers thought that they had become more boring when teaching in a digital learning environment. They believed that they were less liked in digital teaching situations than in physical ones. In general, they felt that they had been losing their qualities as lecturers in digital learning environments due to a lack of eye contact and body language.

There are many reasons why teaching styles change in digital learning environments. One theme the informants addressed was humor. To use humor, one needs confirmation (e.g., smiles and laughter). In an auditorium, they continue if the students laugh, whereas humor in a digital learning environment often fails. In an auditorium, they are able to use silence actively as a tool, but when teaching in a digital learning environment, silence is to a greater extent experienced as uncomfortable.

They also said that they dared to use cases and stories to a lesser extent when teaching in a digital learning environment. This can both be linked to a lack of response (Säljö, 2013) and the fact that teaching is often recorded in a digital learning environment. When recording, one becomes more aware of not telling personal stories or examples that can be traced back to someone. They also said that they had become very aware of saying things correctly straight away, since the students could review it many times. In a physical lecture, teachers are able to correct themselves and be freer in how they formulate their words. As Henriksen et al. (2020) pointed out, the transition from teaching in a physical to a digital learning environment had been abrupt due to the COVID-19 pandemic. It takes time to change teaching style, so the situation was perceived as demanding. The teachers based their teaching styles on the ones they had used in the past in traditional teaching, and this gave them a guide for the kind of expectations they had of the situation. This is an example of the remediation of teaching in a digital learning environment, which contains elements from classroom teaching (Bolter & Grusin, 2000).

For the students to experience an engaged and present teacher in a digital setting, the respondents emphasized that this required them to have greater presence through quick response times by e-mail and telephone. Digital recordings also required more structure in Canvas (or equivalent) and greater predictability in activities and lectures. This was also pointed out in Fritze and Nordkvelle (2016).

4) Easy Form and Attendance but Lack of Informal Interaction

The categories of form and attendance cover what the informants said about how attendance and the form of teaching had been affected by the fact that it was digital. On the positive side, the teachers experienced attendance to be higher when teaching in a digital learning environment

than in traditional lectures. It thus appears that teaching in a digital learning environment can reach more people than do lectures in an auditorium. They cited figures as high as 85% attendance, which they saw as a significantly higher proportion than those who chose to attend a physical lecture, certainly when they were teaching large groups of students. It was also easier for teaching colleagues to participate. Another advantage was that it is easy for external participants to participate in the teaching, and there are unlimited places in online teaching.

This corresponds to Solberg and Breivik's (2016) reasoning that the use of digital tools in teaching increases the availability of learning resources and makes them more flexible and effective.

Teaching in a digital learning environment also affects the form of teaching. While traditional teaching in a physical learning environment is typically 45 × 45 minutes with a fifteen-minute break, teaching in a digital learning environment requires frequent breaks to maintain interest and commitment. The teachers also talked about breaks being different. In an auditorium, the breaks typically consist of break talk with the students, and thus are a great opportunity for interaction. During a break in online teaching, most people will need to log off, and in large groups, no one wants to speak during the break because they will be heard by everyone. The teachers had the best experience when dividing up the teaching sessions with frequent breaks and preferred conducting several sessions rather than doing everything in one day.

When recordings were made, this also affected the lecture and interaction with the students. Privacy legislation requires that students not be recognized on admission, so interaction with the students must wait until after the topic has been presented. This in turn can lead to students forgetting the input they had or not daring to ask about something.

5) Easy to Arrange Group Work, but the Students Leave

This main category contains the informants' statements about their experiences of group work when teaching in a digital learning environment. Group work had some advantages digitally. The use of "breakout rooms" was simple, and no time was wasted organizing and finding group rooms. The teachers also found that it was easy to visit the various groups and contribute to the conversations and that the exchange between groups and plenary was efficient and simple.

The challenge with teaching groups in a digital learning environment was that (very) many students simply disappeared from the lecture when group work was introduced. In traditional physical teaching, it would be rude to disappear during group work, but in a digital setting, students have a low barrier to leaving. This was a consistent experience among the informants.

The reasons why students would withdraw from group work were debated in the group interviews. The students may be afraid they are not sufficiently well prepared or of joining a group of strangers. The large dropout rate, in other words, may have been due to what Lee et al. (2020)

noted in their study as students experiencing insecurity in a digital classroom. To achieve increased student activity in group work, for example, it can therefore be useful to consider activities that help them to be seen, heard, and feel welcome at the start of the course. The informants suggested fixed breakout groups throughout the semester to make the students feel safe. One of the teachers also mentioned how she would repeat points from video clips that the students had been asked to watch beforehand (asynchronously) to get everyone involved. This helped somewhat with attendance in the groups, but it would take up time.

In addition to breakout groups and flipped classrooms, Mentimeter and Kahoot were mentioned as other student-active forms of teaching for digital learning environments. In retrospect, privacy surrounding these tools has become problematic.

6) Dissonance in Experiences and Evaluation

This main category consists of statements made by the participants about how they had learned and developed in terms of teaching in digital learning environments, as well as how they evaluated their experiences. It is interesting that the teachers had not experienced specific challenges with teaching in a digital learning environment, technically speaking. It was seen as easy to achieve, had been a positive development, and they had learned quickly. Of the positive consequences, it was mentioned that teaching in a digital learning environment had made them more aware of the teaching format. In traditional teaching, the shift between lecture and student activity occurs spontaneously and seamlessly, whereas teaching in a digital learning environment requires much more planning, and the informants wanted to take this awareness of the teaching format with them into physical learning environments.

Generally speaking, they also described having good experiences with teaching in digital learning environments. Despite the challenges of communication and demotivation, they wanted to continue using digital learning environments. These statements indicated that the experience the teachers had gained with digital learning environments during the COVID-19 pandemic contributed to them feeling more confident with the tools and a having a subjective sense of mastery (Bandura, 1997). In this way, they could connect educational considerations to subjects and the use of digital tools to a greater extent (Fossland, 2015). They also developed better didactic-digital competence (Krumsvik, 2007). There was still room for the informants to acquire more knowledge of digital tools so that they could move from the strategy of transparent immediacy to hyper mediation (Bolter & Grusin, 2000).

The data from the interviews contained some interesting contradictions. Although the teachers had many negative emotional reactions to teaching in a digital learning environment, most were nevertheless positive about continuing with it. They found the students to be less engaged and unwilling to sign up for group work, yet they thought that teaching in a digital learning environment had gone well. Perhaps this is connected to the fact that both lecturers and students can apparently keep more distance and choose not to become so personally involved. Teaching in a digital learning environment seemed to lead to a comfortable distance and apathy, with the risk

of both students and teachers becoming resigned. The teachers would do what they had to, try not to be influenced, and describe their reactions to feeling resignation (Meyer & Stensaker, 2011).

Teaching and learning are activities that require a great deal of effort by both teachers and students (Nordkvelle, 2016). Initially, teaching in a digital learning environment may appear to be an easier way to teach and learn, but this interview study showed that it is demanding to make it work optimally with large groups of students—perhaps more demanding than classroom teaching.

Conclusions and Further Research

Based on two group interviews with experienced teachers who had completed a year of teaching in digital learning environments due to the COVID-19 pandemic, we gathered the informants' experiences of teaching in digital versus physical learning environments with large student cohorts.

The main finding was that teachers had negative perceptions of black screens and lower response among students. The teachers got tired and demotivated and were drained of energy. They found that it affected their teaching style in a negative sense, in that they lost their qualities as lecturers; they became more boring and less free in what they could say due to their teaching being recorded. Even if the teachers had negative perceptions of black screens, some of them got used to the black screens after a longer period. On the positive side, there was good attendance, and the technicalities were manageable. In addition, there were many aspects of group work online that were easier than in a physical learning environment. The challenge was that many of the students chose to leave lectures during group work. The study also shows that teachers put a lot of effort into countering the negative experiences, to the extent that they managed to create a sense of security and greater commitment. They found that one of the biggest challenges in achieving student activity when teaching in digital learning environments with large cohorts was the insecurity of the participants. The findings also show that the teachers became somewhat resigned when the measures they had implemented do not result in them getting a response in a digital learning environment. Teaching in digital learning environments seemed to lead to a form of digital apathy. It required more effort by both students and the teachers than did teaching in physical learning environments.

This was a qualitative study for which information had been gathered from a few selected subjects and teachers at a single institution. The results provided examples of how the situation can be experienced, and thus contribute to a deeper understanding of how teachers experience teaching in digital learning environments with large student cohorts in a crisis situation (pandemic). More studies are needed to map out the experiences of teachers from different disciplines and from other institutions, but aspects of the study can be transferred to similar situations when the context is taken into account. Regarding methodological limitations, more studies are needed to capture direct quotes and statements from the teachers by recording the interviews.

It is also important to point out that the study was conducted at a time when teaching in digital learning environments was quite novel, and the expectations and view of how teaching "should

be" were thus characterized by teaching in physical learning environments. The experiences may therefore look different in the long-term, and it will be interesting for longitudinal studies to capture this.

References

Bandura, A. (1997). *Self-efficacy. The exercise of control*. H. Freeman & Co.

Bergwits-Larsen, I. (2021). Marissa Liu (23) er misfornøyd med den digitale undervisningen. Slik kan studiehverdagen bli etter pandemien [Marissa Liu (23) is dissatisfied with the digital teaching. This is how everyday life at school can be after the pandemic]. *Aftenposten*. https://www.aftenposten.no/karriere/i/lERdre/marissa-liu-23-er-misfornoeyd-med-den-digitale-undervisningen-slik-k

Bolter, J. D., & Grusin, R. (2000). *Remediation: understanding new media*. MIT Press.

Braun, V., & Clarke, V. (2022). Thematic analysis—A practical guide. London: SAGE

Braun, V., & Clarke, V. (2020). One size fit all? What counts as quality practice in (reflexive) thematic analysis? *Qualitative Research in Psychology*, https://doi.org/10.1080/14780887.2020.1769238

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior. Perspectives in social psychology*. Plenum.

Dyregrov, A. (2018). *Katastrofepsykologi [Disaster psychology]* (3rd ed.). Fagbokforlaget.

Fauville, G., Luo, M., Queiroz, A. C. M., Bailenson, J. N., & Hancock, J. (2021). *Zoom exhaustion & fatigue scale*. SSRN. http://dx.doi.org/10.2139/ssrn.3786329

Fojcik, M., Fojcik, M. K., & Kyte, L. (2021). Faktorar Som Påverkar Kvaliteten På Digital Undervisning [Factors that affect the quality of digital education]. *Nordic Journal of STEM Education*, *5*(1). https://doi.org/10.5324/njsteme.v5i1.3944

Fossland, T. (2015). *Digitale læringsformer i høyere utdanning [Digital forms of learning in higher education].* Universitetsforlaget. http://dx.doi.org/10.18261/issn.1891-5949-2016-02-08

Fritze, Y., & Nordkvelle, Y. T. (2016). Det fleksible engasjement. [The flexible commitment]. *UNIPED, 39*(2), 158–170. http://dx.doi.org/10.18261/issn.1893-8981-2016-02-06

Henriksen, D., Creely, E., & Henderson, M. (2020). Folk pedagogies for teacher educator transitions: Approaches to synchronous online learning in the wake of COVID-19. *Journal of Technology and Teacher Education, 28*(2), 201–209.

Korseberg, L., Svartefoss, S. M., Bergene, A. C., & Hovdhaugen, E. (2022). *Pedagogisk bruk av digital teknologi i høyere utdanning [Pedagogical use of digital technology in higher education]*. NIFU.

Kuvaas, B., & Dysvik, A. (2008). *Lønnsomhet gjennom menneskelige ressurser, evidensbasert HRM [Profitability through human resources, evidence based HRM]*. Fagbokforlaget.

Langford, M., & Stang, E. G. (2020). Slik gikk den store digitale omstillingen etter koronakrisen [This is how the major digital transformation went after the corona crisis]. *Aftenposten*. https://www.aftenposten.no/meninger/kronikk/i/6jRv4e/slik-gikk-den-store-digitale-omstillingen-etter-koronakrisen-malcolm

Lee, A.Y., Moskowitz-Sweet, G., Pelavin, E., Rivera, O., & Hancock, J.T. (2020). Bringing you into the Zoom: The power of authentic engagement in a time of crisis in the USA. *Journal of Children and Media*. https://doi.org/10.1080/17482798.2020.1858437

Lervik, M.J., & Madsbu, J. P. (2021, January 29). Svarte Skjermer: Foreleserens eller studentenes problem? [Black screens: The lecturer or the students' problem?]. *Forskersonen*. https://forskersonen.no/hogskolen-i-innlandet-kronikk-meninger/svarte-skjermer-foreleserens-eller-studentens-problem/1805723

Lervik, M. J., Vold, T., & Holen, S. (2018). Conditions for cooperating and dialogue through of utilization of technology in online education. *Universal Journal of Educational Research*, *6*(10), 2352–2363. https://doi.org/10.13189/ujer.2018.061034

Liamputtong, P. (2011). *Focus group: A practical guide for applied research*. (5th ed.). Sage Publications, Ltd.

Marek, M. W., Chew, C. S., & Wu, W. C. V. (2021). Teacher experiences in converting classes to distance learning in the COVID-19 pandemic. *International Journal of Distance Education Technologies*, *19* (1), 40–60. http://dx.doi.org/10.4018/ijdet.20210101.oa3

Mason, J. (2002). *Qualitative researching* (2nd ed.). Sage.

Meyer, C. B., & Stensaker, I. G. (2011). *Endringskapasitet [Change capacity]*.Fagbokforlaget

Mheidly, N., Fares, M. Y., & Fares, J. (2020). Coping with stress and burnout associated with telecommunication and online learning. *Frontiers in Public Health*, *8*, 672. http://dx.doi.org/10.3389/fpubh.2020.574969

Monk, N., McDonald, S., Pashfield-Neofitou, S., & Lindgren, M. (2015). Portal pedagogy: From interdisciplinarity and internationalization to transdisciplinarity and transnationalization. *London Review of Education*, *13*(3), 62–78. https://doi.org/10.18546/LRE.13.3.10

Nordkvelle, Y. (2016). Lærer- og elevkommunikasjon i nettbaserte undervisningsmiljø [Teacher and student communication in digital teaching environments]. In I. Helleve, A. Grov Almås, & B. Bjørkelo (Eds.), *Den digitale lærergenerasjonen. Utfordringer og muligheter [The digital teacher generation. Challenges and opportunities]* (pp.162–182). Gyldendal.

Norwegian Centre for Research Data AS. From 01.01.2022: Norwegian Agency for Shared Services in Education and Research.

Popa, D., Repanovici, A., Lupu, D., Norel, M., & Coman, C. (2020). Using mixed methods to understand teaching and learning in COVID 19 times. *Sustainability*, *12*(20), 8726. https://doi.org/10.3390/su12208726

Ronæs, N., Haugnes, T., & Swanberg, A. (2012). *Hvordan engasjere studentene? BI LearningLab: En idébok med eksempler [How to engage the studens. BI LearningLab: An idea book with examples].* Alpha Forlag.

Sigrell, A. (2011). Att förelesa är att lyssna [To lecture is to listen]. In A. Skodvin, K. H. Flyum, G. Knudsen, & E. Simonsen (Eds.), *Forelesningens kunst [The art of the lecture]* (pp. 29–49). UNIPUB forlag.

Solberg, E., Hovedhaugen, E., Gulbrandsen, M., Scordato, L, Svartefoss, S. M., & Eide, T. (2021). *Et akademisk annerledesår. Konsevekvenser og håndtering av koronapandemien ved norske unversiteter og høgskoler [An academically different year. Consequences and handling of the coronavirus pandemic at Norwegian universities and colleges]*. NIFU.

Solberg, M., & Breivik, J. (2016). Digitale verktøy og læring i høyere utdanning [Digital tools and learning in higher education]. In H. I. Strømsø, K. H., Lycke, & P. Lauvås (Eds.), *Når læring er det viktigste. Undvervisning i høyere utdanning [When learning is the most important thing. Teaching in higher education]* (pp. 231–248). Cappelen Damm Akademisk.

Säljö, R. (2013). Støtte til læring - tradisjoner og perspektiver [Support for learning – Traditions and perspectives]. In R. J. Krumsvik & R. Säljö (Eds.), *Praktisk Pedagogisk utdanning [Practical pedagogical education]* (pp. 53–79). Fagbokforlaget.

Vygotsky, L. S. (1986). *Thought and language*. MIT Press.

Wittek, L., & Bratholm, B. (2014). *Læringsbaner: om lærernes læring og praksis [Learning paths: About teachers' learning and practice].* Cappelen Damm Akademisk.